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Surveillance indicators and their use in implementation of the Marine Strategy Framework Directive

Samuel Shephard, Simon P.R. Greenstreet, Gerjan J. Piet, Anna Rindorf, and Mark Dickey-Collas

The European Union Marine Strategy Framework Directive (MSFD) uses indicators to track ecosystem state in relation to Good Environmental Status (GES). These indicators were initially expected to be ‘operational’; i.e., to have well understood relationships between state and specified anthropogenic pressure(s), and to have defined targets. Recent discussion on MSFD implementation has highlighted an additional class of ‘surveillance’ indicators. Surveillance indicators monitor key aspects of the ecosystem for which there is: firstly, insufficient evidence to define targets and support formal state assessment; and/or secondly, where links to anthropogenic pressures are either weak or not sufficiently well understood to underpin specific management advice. Because of this, these indicators cannot qualify as ‘operational’ indicators. However, surveillance indicators are not expected to directly track state in relation to GES, but may provide complementary information (including warning signals) that informs and supports science, policy and management. In this paper, we (1) present a framework for including surveillance indicators into the Activity-Pressure-State-Response (APSR) process, (2) consider a range of possible indicators that could perform this surveillance role, and (3) suggest criteria for assessing the performance of candidate surveillance indicators, which might guide selection of the most effective indicators to perform this function.

Keywords: Operational indicators, indicator-based management frameworks, policy reaction, management response, good environmental status, assessment and reporting.